Foster Corporation

Connecticut State Technology Extension Program

Foster Increases Productivity With Lean Manufacturing

Client Profile:
Foster Corporation is a rapidly growing producer of custom and specialty thermoplastic compounds for the medical, wire and cable, and electrical/electronics products industries. Serving the leading medical product original equipment manufacturers (OEMs), Foster enjoys a reputation for developing formulations for "it can't be done" applications. Founded in 1990, the company is located in Dayville, Connecticut, employs 38 people, and is currently looking forward to a plant expansion, which will include a clean room for pharmaceutical grade compounding. Foster also maintains a facility in North Las Vegas, Nevada, which employs 10 to 12 people.

Situation:
Foster began to experience the effects of a trend among molding companies serving medical equipment customers in which they are now demanding premium materials with shorter and shorter delivery times--two to three weeks from "art to part." Foster realized that in order to grow the business, the company had to improve its turnaround time. Foster's owner, Lawrence Acquarulo, first heard about the benefits of lean manufacturing at a Northeast Utilities (NU) presentation. Shortly after learning the value of lean, the Connecticut State Technology Extension Program (CONNSTEP), a NIST MEP network affiliate, contacted him to discuss its lean manufacturing services. CONNSTEP offered funding help and a program to reduce turnaround time that fit perfectly with Foster's goals and objectives.

Solution:
Before long, CONNSTEP began providing Connecticut Department of Labor-sponsored lean awareness and value stream mapping training to the Foster workforce. CONNSTEP organized and facilitated a continuous improvement team comprised of representatives from all departments, including purchasing and production maintenance, as well as the extrusion production workers. The team conducted a value stream mapping exercise on the entire production process, beginning with order entry and acquisition of materials through the extrusion process and shipping.
Because Foster has many customers in the medical markets, going from one run to the next often requires a "bare metal clean down" and setup. Due to the varied lot sizes the company produces, a number of changeovers are performed during the week. To improve lead times, Foster had to reduce setup times while

maintaining a high standard of quality.
CONNSTEP designed a reduction project to address the delays causing the lengthy changeover time from extruding one material to the next. Much of this time was used to clean extruder screws and avoid batch-to-batch residue contamination. On CONNSTEP's recommendation, Foster purchased new extruder components, such as an additional screw and a swivel head fixture which minimize the cool down period during the batch-to-batch changeovers. CONNSTEP worked with the company to develop standard work practices and trained the workers in the new procedures. Quality issues identified during the setup reduction study were addressed, and CONNSTEP developed solutions expected to save over $60,000 per year. At the conclusion of the project, Foster reduced its setup times by 40 percent and increased productivity by over 15 percent, making it more competitive in the industry.

Results:
Reduced setup times by 40 percent.
Increased productivity by over 15 percent.
Increased throughput by $300,000 per year.
Saving over 17,000 kilowatt hours per year as a result of these improvements.
Saving $60,000 in annual costs.

Testimonial:
"We knew that in order to improve our lead times we had to reduce our set-up times while maintaining a high standard of quality."
Richard Quigley, Operations Manager